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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/373,333 08/12/99 SUBRAMANIAN

V 0113.004

020350 HM12/0801  
TOWNSEND AND TOWNSEND AND CREW  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO CA 94111-3834

EXAMINER

JOHANNSSEN, D.

ART UNIT

PAPER NUMBER

1655

DATE MAILED:

08/01/01

23

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/373,333

Applicant(s)

Subramanian et al

Examiner

Diana Johannsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Apr 30, 2001
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above, claim(s) 38-60 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 and 61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

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### **FINAL ACTION**

1. This action is in response to paper no. 19, filed April 30, 2001.

It is noted that as claims 1-60 were pending in the application prior to the receipt of paper no. 19 (with claims 38-60 being withdrawn), the new claim numbered "38" added by paper no. 19 has been renumbered as claim 61. See the Claim Objection, below, for further explanation.

Claims 1-9, 12-14, 23-35, and 37 have been amended, claim 61 has been added, and claims 38-60 have been withdrawn from consideration. Claims 1-37 and 61 are now under consideration. The amendments and arguments have been thoroughly reviewed, but are not persuasive for the reasons that follow. Any rejections not reiterated in this action have been withdrawn as being obviated by the amendment of the claims. **This action is FINAL.**

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The Change of Correspondence Address filed January 22, 2001, paper no. 18, the Appointment of Associate Attorney filed May 18, 2001, paper no. 20, and the Power of Attorney and Revocation filed July 17, 2001, paper no. 21, have been entered.

### ***Election/Restriction***

4. Claims 38-60 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 16.

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*Claim Objections*

**THE FOLLOWING ARE NEW GROUNDS OF OBJECTION NECESSITATED BY APPLICANTS AMENDMENTS TO THE CLAIMS:**

5. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 38 has been renumbered claim 61.

*Claim Rejections - 35 U.S.C. § 112*

6. Claims 1-37 and 61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, for the reasons stated below and in the Office action of paper no. 17. **It is noted that Applicants' amendments to the claims necessitated the inclusion of new claim 61 in this rejection.**

Claims 1-37 and 61 are indefinite for failing to recite a final process step that clearly relates back to the claim preamble. It is acknowledged that the claims have been amended so as to be drawn to methods "of identifying a recombinant herbicide tolerance nucleic acid which can confer tolerance to an herbicide upon a cell", and to recite a final process step of screening a

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library “to identify at least one recombinant herbicide tolerance nucleic acid which encodes a polypeptide with an activity that confers herbicide tolerance to a cell”. However, the claims remain indefinite because it remains unclear as to whether the claims are intended to be limited to methods of “identifying” any “herbicide tolerance nucleic acid which can confer tolerance”, or to only herbicide tolerance nucleic acids that encode “a polypeptide with an activity that confers herbicide tolerance to a cell”. Accordingly, this rejection is maintained.

Claims 1-37 and 61 are indefinite over the recitation of the term “derived”. The response traverses the rejection on the following grounds. The response notes that the claims as amended recite “a plurality of nucleic acid segments, which nucleic acid segments are derived from a plurality of variant forms of one or more parental nucleic acids”. The response argues that “Taken in light of the statement that the term a ‘nucleic acid derived from a gene’ refers to a nucleic acid for whose synthesis the gene, or a subsequence thereof, has ultimately served as a template,’ (page 16, lines 15-16) it can be unequivocally concluded that the plurality of nucleic acid segments have been synthesized, e.g., by transcription, replication, amplification, etc., using the variant forms (or subsequences thereof) of one or more parental nucleic acids as a template”. This argument has been thoroughly considered but is not persuasive. The claims recite the language “nucleic acid segments are derived from a plurality of variant forms of one or more parental nucleic acids”, whereas the citation in the specification referred to be applicant refers to a “nucleic acid derived from a gene”. While a ‘nucleic acid segment’ is a type of nucleic acid, a gene would not be considered but one of skill in the art to be an equivalent of a “plurality of

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variant forms of one or more parental nucleic acids". Further, while the specification provides as examples mRNA and cDNA, there is no discussion at page 16, lines 15-20 of nucleic acids segments "derived" from pluralities of variant forms of parental nucleic acids, nor does the specification provide a limiting definition of the language "derived". Accordingly, applicants arguments are not persuasive, and this rejection is maintained.

Claims 1-37 and 61 are indefinite over the recitation of the term "identify". The response traverses the rejection of the grounds that "The term 'identify' is used in the art, and throughout the present application as synonymous with the term 'detect'". The response argues that "identification is a product of a screening process, and can not be considered to encompass merely mental steps divorced from properties....of an encoded polypeptide or protein". These arguments have been thoroughly considered but are not convincing. While one of skill in the art might consider "detection" to constitute a type of "identification", a skilled artisan would not consider these terms synonymous absent the provision of a limiting definition to that effect. For example, one could mentally compare one sequence with another and "identify" one as being the same as the other if the sequences were identical, but such an action would not be considered by a skilled artisan to constitute "detection" of a sequence. With respect to the present claims, if the claims required "detection" of a nucleic acid, it would be apparent to one of skill in the art that one was to determine whether that nucleic acid was present; however, "identifying" might or might not include further steps of, e.g., determining the sequence of that molecule (so as to determine the "identity" of that molecule). Accordingly, as neither the specification nor the art provide a clear

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and limiting definition of this terminology, this rejection is maintained. **It is noted that this rejection also applies to the instances of the term “identify”/“identifying” added to the claims by the amendment of paper no. 19, as the new recitations of this language render the claims indefinite for the same reasons previously discussed.**

Claims 21-22 are indefinite over the recitation of the language “nucleic acid encodes an activity”. While applicant has amended many of the claims to modify this language, claims 21-22 have not been amended. Accordingly, this rejection is maintained.

**THE FOLLOWING ARE NEW GROUNDS OF REJECTION NECESSITATED BY APPLICANTS AMENDMENTS TO THE CLAIMS:**

Claim 3 is indefinite over the recitation of the language “wherein a plurality of parental nucleic acids” and “between polypeptides”. As it is unclear as to whether applicant intends to refer back to the previously recited “plurality of parental nucleic acids” and to the previously recited “polypeptides”, it is unclear as to how the claim is intended to further limit the claim from which it depends.

Claim 5 is indefinite over the recitation of the language “wherein one or more parental nucleic acids”. As it is unclear as to whether applicant intends to refer back to the previously recited “one or more parental nucleic acids”, it is unclear as to how the claim is intended to further limit the claims from which it depends.

Claims 10-11 are indefinite over the recitation of the limitation “the parental nucleic acid”. As a result of the amendments to the claims, antecedent basis for this language is now lacking.

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Claims 19-21 are indefinite over the recitation of the limitation “the activity encoded by the recombinant herbicide tolerance nucleic acid”. As a result of the amendments to the claims, antecedent basis for this language is now lacking.

Claim 31 because it is unclear as to how the claim is intended to further limit claims 1 and 4, from which it depends. The claim is drawn to “The method of claim 1 or 4, comprising screening for a distinct or improved herbicide tolerance activity, which activity is selected from....”. It is unclear as to whether the recitation “comprising screening for a distinct or improved herbicide tolerance activity” is intended to require further steps of performing such screening, to modify the objective and final step of the claims, etc. Clarification is required.

***Claim Rejections - 35 U.S.C. § 103***

7. Claims 1-7, 9-10, 12-20, 23-33, 35-37, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosla et al (U.S. Patent No. 5,521,077 [5/1996]) in view of Subramanian et al (J. Industrial Microbiol. & Biotechnol. 19:344-349 [1997]), for the reasons stated below and in the Office action of paper no. 17. **It is noted that Applicants amendments to the claims necessitated the inclusion of new claim 61 in this rejection.**

Khosla et al teach a method termed “recombination-enhanced mutagenesis” in which “large populations of protein variants” are produced *in vivo* by recombination of multiple sets of allelic variants (see entire reference, especially, e.g., col 1 lines 8-14, col 2, lines 5-64). Khosla et al disclose methods in which steps of recombining “variant forms” *in vivo* to produce a



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recombinant library are followed by a step of screening recombinants for proteins having desired activities (see, e.g., col 2, lines 57-61; col 4, lines 51-58; col 6, line 64-col 7, line 10; Fig. 1).

Khosla et al state that recombinants generated by their methods can be “subjected to selection or screening by any appropriate method depending on the sought after characteristic or property of the protein of interest, for example, enzymatic or other biological activity, binding to a receptor molecule, inhibition of the binding of another receptor ligand, or the like” (col 7, lines 5-10).

However, Khosla et al do not teach or suggest employing their method to obtain or identify nucleic acids encoding an activity “which confers herbicide tolerance” to a cell, as required by the claims. Subramanian et al disclose that herbicide tolerance is desirable in crops, and disclose that genes conferring herbicide tolerance may be incorporated into plants (see entire reference, especially p. 344). Subramanian et al further disclose that it is beneficial for plants to contain multiple herbicide-metabolizing enzymes (p. 344). Finally, Subramanian et al teach methods of screening for new enzymes that confer herbicide tolerance (see, e.g., p. 347), and teach that the identification of novel genes conferring tolerance is beneficial because it provides “more options” for use in transgenic crops (p. 344). In view of the teachings of Subramanian et al, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have modified the “recombination-enhanced mutagenesis” method of Khosla et al so as to have recombined variant forms of nucleic acids encoding activities that confer herbicide tolerance and screened the resultant recombinant libraries for herbicide tolerance. Subramanian et al clearly disclose that the property of herbicide tolerance constitutes, using the language of Khosla et al set

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forth above, a “sought after characteristic or property”. Further, the teachings of Subramanian et al reveal a need for multiple, novel, variant genes that can be used to confer tolerance to crops, and Khosla et al disclose that their “recombination-enhanced mutagenesis” method permits efficient preparation of large, high quality populations of recombinants for screening (see, e.g., col 2, lines 5-61). Accordingly, an ordinary artisan would have been motivated to have modified the method of Khosla et al for the advantage of rapidly and efficiently identifying novel nucleic acid variants encoding activities conferring herbicide tolerance.

With respect to claim 2, it is a property of Khosla et al’s method that it results in the preparation of recombinant molecules that are “distinct” as “compared to the parental nucleic acid”. With respect to claims 3 and 4, it is noted that the combined teachings of Khosla et al and Subramanian et al are sufficient to suggest methods in which “parental nucleic acids” either have or lack “herbicide tolerance activity”. With respect to claim 5, Subramanian et al disclose that herbicide tolerance may result from altered target proteins (Table 1), and thereby suggest the use of parental nucleic acids encoding such proteins in the method of Khosla et al in view of Subramanian et al. With respect to claim 6, Khosla et al teach the use of allelic variants of “parental” nucleic acids in their methods (see, e.g., col 2, lines 33-38). With respect to claim 7, Khosla et al disclose the preparation of a plurality of variants that would be homologous to the “parental nucleic acid” (col 5, lines 11-44). With respect to claims 9-10, and 12, Subramanian et al disclose a variety of herbicide tolerance conferring genes, including bacterial genes encoding 5-enol-pyruvylshikimate-3-phosphate synthase, phosphinothricin acetyl transferase, and glyphosate

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oxidoreductase, and a plant gene encoding acetolactate synthase (Table 1). With respect to claim 14, the libraries taught by Khosla et al are present in a "population of cells", as required by the claims. With respect to claims 13 and 15-17, Subramanian et al disclose a variety of methods of screening for herbicide tolerance, including screening a population of cells for oxidation of dicamba (see, e.g., Fig. 2 and Fig. 3). With respect to claims 18-20, Subramanian et al teach screening by assaying for growth in media comprising the herbicide of interest (p. 347). With respect to claim 23, Subramanian et al disclose that it is beneficial for plants to contain multiple herbicide-metabolizing enzymes (p. 344), and thereby provide motivation to screen for multiple herbicide tolerance activities. With respect to claim 24, the recombining step taught by Khosla et al requires a "plurality of cells"(see, e.g., col 2, lines 30-64). With respect to claims 25-29, Khosla et al disclose that repetition of their methods may be used to generate additional, distinct recombinant molecules (see, e.g., col 7, lines 11-23). With respect to claim 30, Khosla et al teach performance of their methods using bacterial cells (see, e.g., claim 16). With respect to claim 31, Subramanian et al disclose a variety of mechanisms of herbicide tolerance, including, e.g., rapid metabolism of herbicides (see entire reference). With respect to claims 32-33, Subramanian et al discloses that herbicide tolerance genes can be transduced into plants as a means of improving crops, and disclose that herbicide tolerance proteins should function "in a plant environment", thereby providing motivation to screen transgenic plants for herbicide tolerance (p. 344). With respect to claims 35-37, it is a property of the recombinant libraries prepared by the methods of Khosla et al in view of Subramanian et al that they would constitute recombinant libraries and

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comprise recombinant “herbicide tolerance” nucleic acids. With respect to new claim 61, Khosla et al disclose isolating/recovering “identified” molecules that encode a polypeptide with an activity of interest (see, e.g., col 4, lines 35-43).

The response traverses the rejection on the following grounds. The response argues that the Office Action fails to meet any of the criteria for a proper *prima facie* case of obviousness. The response summarizes the methods of Khosla et al by stating that “Khosla et al teach a method of producing protein variants in which two discrete pools of mutants (typically, induced variants) are cloned into distinct vectors to produce independent ‘donor’ and ‘recipient’ substrate pools”, that “The two libraries are transduced into separate populations of cells”, that “The ‘donor’ library is amplified, recovered, and then transduced into the ‘recipient’ cell population, where the ‘donor’ and ‘recipient’ vectors recombine to produce a library of ‘recombinant’ protein variants, which are selected or screened for a desired characteristic”. The response argues that Khosla et al provide no discussion “regarding the suitability of herbicide tolerance as a desired characteristic, nor are any potential target nucleic acids suggested as potential substrates”. The response states that “Subramanian et al relate to methods of screening natural populations”, and that Subramanian et al particularly provide “methods of screening microorganisms...for desired activities”. The response notes sources of microorganisms divulged by Subramanian et al, and notes that the references disclose “the possibility of screening for ‘different oxidative enzymes’”. The response states that Subramanian et al describe methods that “illustrate the identification of natural strains of microorganisms with activities that confer herbicide tolerance”. The response argues that

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Subramanian et al suggest methods involving “screening naturally occurring organisms, primarily microorganisms, for herbicide tolerance”, and further argues that “Nothing in the disclosure suggests that additional methods might be of any use”, that “No mention of producing variants, by any method, is suggested or taught”, and that “the possibilities are strictly limited to the screening of organisms”. With respect to the Subramanian et al reference, the response concludes that “nothing in the disclosure of Subramanian would lead a practitioner of ordinary skill in the art, absent the teaching of the subject application, to search for a method of mutating specific subsets of substrate nucleic acids to generate recombinant nucleic acids that encode proteins with herbicide tolerance activities”. The response further argues that “no expectation of success can be inferred from the cited references, separately or in combination as no disclosure is provided in either reference relating to the selection of suitable substrate nucleic acids”. Finally, the response argues that the references individually and/or in combination “fail to teach all the limitations of the claimed invention”. Particularly, the response refers to step (i) of claims 1 and 4, which recites “providing a plurality of nucleic acid segments”, and argues that neither reference suggests identifying recombinant nucleic acids encoding polypeptides with herbicide tolerance activity.

These arguments have been thoroughly considered but are not convincing for the following reasons. First, it is noted that the Khosla et al reference was not cited for its teachings “regarding the suitability of herbicide tolerance as a desired characteristic”, but rather for its teaching of methods in which “large populations of protein variants” are produced *in vivo* by recombination of multiple sets of allelic variants, and particularly methods in which steps of

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recombining "variant forms" *in vivo* to produce a recombinant library are followed by a step of screening recombinants for proteins having desired activities (see, e.g., col 2, lines 57-61; col 4, lines 51-58; col 6, line 64-col 7, line 10; Fig. 1). Similarly, the Subramanian et al reference was not cited for its teaching of methods of screening natural populations or microorganisms, but for its teaching that herbicide tolerance is desirable in crops, that genes conferring herbicide tolerance may be incorporated into plants (see entire reference, especially p. 344), that it is beneficial for plants to contain multiple herbicide-metabolizing enzymes (p. 344), and that the identification of novel genes conferring tolerance is beneficial because it provides "more options" for use in transgenic crops (p. 344). Accordingly, the teachings that the response argues are lacking in the Subramanian et al reference are provided in the Khosla et al reference, and vice versa, and it is further noted that the rejection of paper no. 17 made clear that this was the case. Further, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In*

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*re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, as was discussed in the Office action of paper no. 17, the Khosla et al reference teaches that recombinants generated by their methods can be “subjected to selection or screening by any appropriate method depending on the sought after characteristic or property of the protein of interest, for example, enzymatic or other biological activity, binding to a receptor molecule, inhibition of the binding of another receptor ligand, or the like” (col 7, lines 5-10). Accordingly, the teachings of the Khosla et al reference would have motivated one of skill in the art to have modified Khosla et al’s methods so as to have isolated any molecule possessing a “sought after characteristic or property”, and Subramanian et al clearly disclose that the property of herbicide tolerance constitutes such a property. Further, as Khosla et al disclose that their method is broadly applicable to molecules having any desired characteristic, and as Subramanian et al disclose that methods of screening for novel enzymes that confer herbicide tolerance are known in the art, one of ordinary skill in the art would clearly have had a reasonable expectation of success in practicing the methods of Khosla et al in view of Subramanian et al. Absent a showing of unexpected results, it would have been *prima facie* obvious to one of ordinary skill in the art to have modified the method of Khosla et al so as to have identified and isolated molecules having any desired property for which a method of screening was available in the art, including herbicide tolerance activity. Finally, with respect to Applicants argument that neither of the cited references teach “providing a plurality of nucleic acid segments”, it is noted that Khosla et al clearly disclose this step (see, e.g., col 2, lines 33-39 , col 3, lines 39-49).

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Accordingly, as the combined references of Khosla et al and Subramanian et al suggest all the limitations of present claims 1-7, 9-10, 12-20, 23-33, 35-37, and 61, this rejection is maintained.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khosla et al in view of Subramanian et al as applied to claims 1-7, 9-10, 12-20, 23-33, and 35-37, above, and further in view of Krebber et al (U.S. Patent No. 5,514,548 [5/1996]), for the reasons stated in the Office action of paper no. 17.

The response traverses the rejection on that grounds that there is no motivation to combine the teachings of Khosla et al and Subramanian et al, for the reasons discussed in paragraph 7, above. Accordingly, the response to those arguments applies equally herein.

The combined references of Khosla et al, Subramanian et al, and Krebber et al suggest all the limitations of present claim 8, and therefore this rejection is maintained.

9. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosla et al in view of Subramanian et al as applied to claims 1-7, 9-10, 12-20, 23-33, and 35-37, above, and further in view of Padgett et al (Herbicide-Resistant Crops, Duke, S.O., ed., CRC Lewis Publishers, Boca Raton, pp. 53-84 [1996]), for the reasons stated in the Office action of paper no. 17.

The response traverses the rejection on that grounds that there is no motivation to combine the teachings of Khosla et al and Subramanian et al, and on the grounds that "even in combination, Khosla and Subramanian fail to teach the limitations of the claimed invention", for



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the reasons discussed in paragraph 7, above. Accordingly, the response to those arguments applies equally herein.

The combined references of Khosla et al, Subramanian et al, and Padgett et al suggest all the limitations of present claims 21-22, and therefore this rejection is maintained.

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khosla et al in view of Subramanian et al as applied to claims 1-7, 9-10, 12-20, 23-33, and 35-37, above, and further in view of Aono et al (Plant Cell Physiol. 36(8):1687 [1995]), for the reasons stated in the Office action of paper no. 17.

The response traverses the rejection on that grounds that Khosla et al and Subramanian et al "individually or in combination", fail to teach the claimed invention, for the reasons discussed in paragraph 7, above. Accordingly, the response to those arguments applies equally herein.

The combined references of Khosla et al, Subramanian et al, and Aono et al suggest all the limitations of present claim 34, and therefore this rejection is maintained.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

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statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

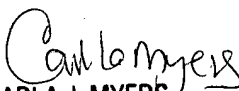
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diana Johannsen whose telephone number is 703/305-0761. The examiner can normally be reached on Monday-Friday from 7:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached at 703/308-1152. The fax phone number for the Technology Center where this application or proceeding is assigned is 703/305-3014 or 305-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703/308-0196.

Diana Johannsen

July 30, 2001

  
CARLA J. MYERS  
PRIMARY EXAMINER